Review: Jac C. Heckelman and Nicholas R. Miller (eds.): Handbook of Social Choice and Voting

Henn, Theresa

Veröffentlichungsversion / Published Version
Rezension / review

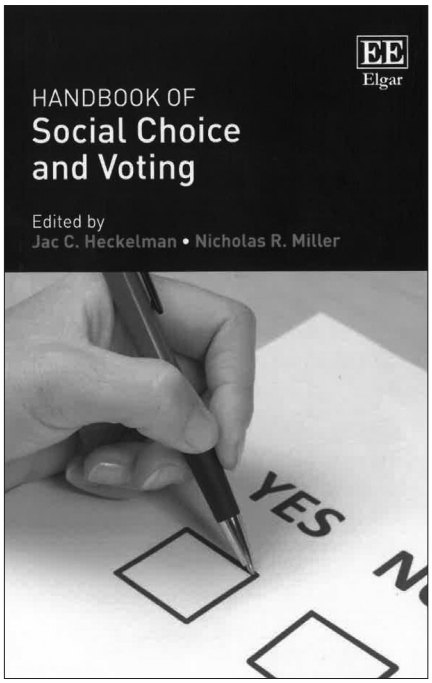
Empfohlene Zitierung / Suggested Citation:
Henn, T. (2016). Review: Jac C. Heckelman and Nicholas R. Miller (eds.): Handbook of Social Choice and Voting. [Review of the book *Handbook of Social Choice and Voting*, ed. by J. C. Heckelman, & N. R. Miller]. *Intergenerational Justice Review*, *2*(1), 30-32. https://doi.org/10.24357/igjr.8.1.471

Jac C. Heckelman and Nicholas R. Miller (eds.): Handbook of Social Choice and Voting

Reviewed by Theresa Henn

The process of collective decision-making is a crucial part of every democratic system. Whether in the case of voting for a candidate in a parliamentary election or when conducting a referendum, individual choices made by numerous citizens have to be aggregated into a single collective decision. However, generating group decisions on the basis of various individual preferences is not that easy. In a democracy, where every citizen has the right to express his or her preferences, the complex decision-making process requires clearly defined rules and has to lay out all available choices on the table. Nonetheless, different rules have different ways of accumulating preferences which, in turn, lead to varying outcomes. Social choice theory, commonly defined as the study of how to aggregate individual orders of preference, identifies and analyses these diverse rules of collective decision-making by applying logic and mathematics and retracing the core of the underlying concepts.

The *Handbook of Social Choice and Voting* by Jac C. Heckelman and Nicholas R. Miller addresses, as its title suggests, the wide field of social choice and attempts to provide an extensive overview of the subject. The title deliberately includes the additional aspect of "voting" to signal that it does not only cover the research in social choice theory in a narrow sense, but also expands it to broader questions of application. Since its early beginnings, this field of study has proven to be a particularly complex subfield of social science. Condorcet, Borda, Arrow and Sen – to name but a few – have occupied themselves with its numerous "paradoxes" and have had a major impact on today's electoral studies. The Handbook seeks to break down the complex theories and ground-breaking logical derivations in an attempt to make this field of science accessible to an academic but non-specialist audience. While other volumes with similar titles exhibit a rather formalistic and theorem-proving



approach and focus on studies of public choice, this Handbook tries to cover a wider and more easily approachable set of issues in the field of social choice. It is composed of contributions from more than 20 different authors and subdivided into five major parts, beginning with the historic origins of social theory and concluding with empirical findings on current political voting paradoxes.

The first part, "Perspectives on Social Choice", starts out historically with the early research in the field of social choice theory, dating back to the ancient Greeks. Ian McLean analyses the evolution of the approach and the puzzle of its steady disappearance and reappearance in the course of time (15). Subsequently, Randall Holcombe elaborates the connection between unanimous consent and what has come to be known as "constitutional economics" by critically analysing Buchanan's pioneering approach to this field of study (35). "Constitutional economics" is commonly defined as the study of effective economic decisions within the binding framework of constitutional law. Holcombe's normatively guided examination seeks to establish a framework that can be used for evaluating constitutional rules and designing desirable laws to further individual and collective goals. The following essay, "Rational choice and the calculus of voting" by André Blais, shifts the focus to the rational choice aspects of social choice theory (54). Downs's well-known rational choice approach had major theoretical impacts on later research concerning participation in democratic mass elections. Blais critically reviews Downs's so-called "paradox of voting" and its continuously added amendments to explain the astonishing puzzle of why people take part in elections. Part one ends with a contribution by Robi Ragan scrutinising computational tools which analyse, apply, or extend traditional social choice models (67). This ground-breaking new technology enables the understanding of fundamental social choice problems the complexity of which could not be untangled with previous traditional tools.

After having established the outlines of social theory in the first part, the second part of the Handbook concentrates on practical implementations concerning pairwise voting choices. Majority rule is among the simplest methods for generating a decision and paradigmatic for social choice theory. Its easiest form is when having to decide between two alternatives whereby one alternative must receive the majority of votes. However, more often than not, there are more than two alternatives available, thus impeding the decision-making process. Scott Moser considers those more complex voting situations and focuses mainly on the Condorcet principle and May's Theorem (83). In particular, he evaluates the mathematical structure and varying outcomes of so-called "tournaments" which apply when majority ties do not occur. Keith L. Dougherty further specifies this concept of majority rule and discusses a variation of different majority options. Overall, he elaborates on the importance of supermajority rules in social decision-making. Proceeding with the key

aspect of vote aggregation, Dan S. Felenthal and Moshé Machover measure "a priori voting power" in the following chapter (117). This concept evolves around the expectation that voting power may not be distributed equally, let alone proportionally, to the final voting outcome. Often, one vote does not carry the same weight as another (e.g. the vote of one shareholder who owns more than 50% of a company). Therefore, the widely accepted principle of "one person one vote" does not always apply. Part two concludes with a contribution discussing the "Condorcet Jury Theorem". This theorem implies that a group which uses simple majority voting to generate a decision is more likely to make the correct choice than an individual all by him- or herself. This suggests that, as the saying goes, wisdom might indeed lie in the crowds.

The third part revolves around various spatial models of social choice. Its essential idea is that a geometrical approach is able to reflect the "space" of various policy alternatives, different candidates, and all other political decisions within a one- or multi-dimensional model. Based on this understanding, voters' preferences are aligned and traceable at a political continuum, the ends of which represent alternatives to a particular decision. Voters reconcile their so-called "ideal points" with different political positions along this continuum and pick the alternatives closest to their own preferred outcome. The origin of the standard spatial model goes back to Duncan Black and was later advanced by Downs. Nicholas R. Miller picks up the most basic elements of this model in his essay "The spatial model of social choice and voting". He distinguishes people locating themselves at the centre of the political continuum from the more extreme left- and right-wing political positions at both ends of the spectrum (163). Applying these basic approaches to an institutional level, Thomas H. Hammond discusses a newly developed unified spatial model of the American Congress. Essentially, this model provides guidance for understanding fundamental problems involving policy stability and the responsiveness of the US system. It also elaborates the tendency towards gridlocks inflicted by the constitution itself. However, in order to understand real world parties' policy behaviour, another spatial model was introduced. The so-called "electoral competition spatial model" – developed by Hotelling – originally analysed economic puzzles. However, Downs picked up its basic ideas and converted it for the purpose of political analysis. Today's "Downsian spatial model" assumes that the motivations of politicians are simply office-seeking incentives, whereas voters are purely policy-oriented. This approach is further extended by Peter J. Coughlin and critically investigated in his essay "Probabilistic voting in models of electoral competition" (218). His expansion of the Hotelling-Downs model displays astonishing results regarding Nash equilibriums and voting behaviour as forecasted by the original model.

The Handbook having so far analysed pairwise social choice, part four continues with social choice from multiple alternatives. One of the most famous scholars to have dealt with various kinds of voting systems and the aggregation of individual preferences is Kenneth Arrow. His well-known "impossibility theorem" has uncovered the impracticality of all voting systems to simultaneously guarantee certain minimal conditions of fairness and sensibility when choosing between three or more alternatives. Elizabeth Maggie Penn seeks to get hold of this phenomenon and analyses other findings of scholars who have extended Arrow's axioms. By concluding that one choice always seems to be deemed inferior to other possible options, Penn highlights the challenges and difficulties which – according to her – make a democratic system significant (260). Following these findings, Jac C. Heckelman addresses the "properties and paradoxes of common voting rules". He compares the most commonly studied voting rules in which only one single winner is picked out of several options. Nicolaus Tideman, in his contribution, modifies this approach by dealing with voting rules that can be used for selecting multiple winners. To this end, he establishes five key categories for evaluating different voting systems. One of his crucial arguments is that the representation of a diverse population must be guaranteed by all voting systems. However, he concludes that a trade-off between greater representativeness and the convenience of the voting system will always prevail.

In order to combine social choice theory with empirical analysis, different measures must be applied for linking empirical findings to constructed concepts of social choice. The spatial model – described and analysed in part three – has already given an insight into how geometrical approaches may simplify voting predictions and outcomes. Following up on this idea, Christopher Hare and Keith T. Poole try to get hold of ideological positions in the US Congress. To this end, they evaluate roll call voting data from US Congressmen and depict those decisions on a left-right continuum. Based on this approach, Hare and Pool employ the so-called "random utility model" which entails specific scaling procedures (333). This model tries to get hold of the utility one legislator gains from each of his or her roll call choices, implying that he or she will vote for whichever alternative is closest to his or her ideal point. The following chapter, "The uncovered set and its applications", consists of many contributions specifying the so-called "uncovered set" (UCS) – a social choice set of alternatives which are not covered by any other alternatives (396). The authors use a newly developed "grid search algorithm" estimating uncovered sets in diverse environments under majority rule. Their findings show that policy choices are always constrained by other alternatives from the uncovered set. The final essay, by Marek M. Kaminski, discusses empirical examples of voting paradoxes that had serious political consequences in real life. One famous example is the US presidential election in 2000 in which George W. Bush defeated Al Gore, despite coming in second on the popular vote.

All in all, this Handbook can be described as well-written and fairly balanced. However, it is debatable whether it fulfils its general purpose as a Handbook of social choice and voting behaviour. By a universal definition, a Handbook should be a general compendium of information in a certain field of research which is comprehensively designed and provides quick answers for its covered subject. Heckelman and Miller pointed out that this was their reasoning as well: compiling a perspicuous composition of the wide field of social choice in order to break down the complex concepts for an academic but non-specialist audience. Evaluating this attempt, the selection of each chapter is logical and also the organisation of the chapters is coherent. Still, the essays themselves are quite technical and especially parts two and three ("Pairwise Social Choice" and "Spatial Models of Social Choice") may not be understandable for readers unfamiliar with

the subject. Complex spatial models and intricate formulas may lead to confusion and a lack of understanding on the part of the audience which the editors wish to reach. Considering that Heckelman and Miller sought to compose an approachable Handbook which is distinct in this regard from other more expert books such as *The Elgar Companion to Public Choice* by Shugart and Razzolini, it is questionable whether they reached their goal. It may even be concluded that this Handbook is partially redundant, given other previously written books covering this field of research. Nevertheless, this Handbook seeks to assort a collection of all relevant social choice aspects and provides a good to very good insight of this field of science. Especially the detailed glossary and index are useful for a quick orientation.

Another point of criticism is the fact that many of the models analysed only apply to presidential systems using majority rule, such as that of the United States. A parliamentary system with proportional representation is often not included in the practical analysis and does not receive enough consideration. On the contrary, empirical findings refer most often to the US Congress (e.g. Chapter 18 "Measuring ideology in Congress"). The process of coalition formation and social choice theory on proportional voting systems is not covered at all, leaving several questions unanswered. How are coalitions formed and how does this affect the voting behaviour of citizens?

A greater use of "real life" examples – found in chapter five – would have increased the clarity of the Handbook especially for a non-specialist audience. Moreover, considering that the field of social choice is constantly evolving, it might have been desirable to include a look at the future prospects of the field.

Nonetheless, the Handbook by Heckelman and Miller provides a comprehensive and up-to-date overview of the vast and seemingly impenetrable field of social choice and voting. Written in a reasonably understandable technical style, the authors succeed in making complex issues relatively accessible to a non-expert audience. Therefore, the *Handbook of Social Choice and Voting* is a great addition to every bookshelf and recommended to all scholars who are interested in this field of study.

Heckelman, Jac C. / Miller, Nicholas R. (eds.) (2015): Handbook of Social Choice and Voting. Cheltenham: Edward Elgar. 424 pages. ISBN: 978-1-783-47072-3. Price: £140.